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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,027	10/10/2003	Tomomichi Kanda	396.43206X00	8004

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EXAMINER
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TRAN, THAO T

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/682,027	Applicant(s) KANDA ET AL.	
	Examiner Thao T. Tran	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006 and 04 January 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 2-12 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This is in response to the Amendments filed on 01/06/2006 and 01/04/2006. The Affidavits filed on 01/04/2006 is also acknowledged.
2. Claims 2-12 are currently pending in this application. Claim 1 has been canceled. Claims 10-12 have been newly added. Claims 2-9 have been amended.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 2-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is indefinite due to the use of “(t/to)”. It is unclear to the examiner whether the content in the parentheses is a limitation or not. If it is a limitation, Applicants are required to remove the parentheses.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 2-5 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Matlack et al. (US Pat. 5,028,462).

Matlack discloses a gas barrier multilayer structure for making bottles, the multilayer structure comprising an inner and an outer layer of a thermoplastic resin and at least one intermediate layer of a polyamide composition having excellent gas barrier properties (see col. 1, ln. 6-15). The polyamide composition comprises a copolyamide of isophthalic acid, adipic acid (alpha, omega-linear aliphatic dicarboxylic acid of C<sub>6</sub>), and m-xylylenediamine in a molar ratio of 50-35/0-15/50 (see col. 5, ln. 22-27; col. 7, ln. 1-20). The multilayer structure further comprises adhesive layers interleaved between the intermediate layer and the inner or outer layers (see col. 3, ln. 46-47).

The polyamide composition has a glass transition temperature of 90°C and an oxygen transmission rate of about 2.0 cc-mil/100 in<sup>2</sup>-day-atm (0.129 cc-mil/m<sup>2</sup>-day-atm) (see col. 28-31). The thickness of the polyamide intermediate layer is about 5-20% of the total thickness of the multilayer (see col. 10, ln. 52-60).

Although the reference does not specify the minimum half crystallization time or the melting point of the polyamide composition, since the reference discloses the same chemical composition, the polyamide composition of the reference would inherently have the same physical properties, such as crystallization and melting point.

Matlack further discloses the polyamide being formed by melt blending adipic acid, isophthalic acid, and m-xylylenediamine to copolymerize, forming pellets of the polyamide, and then heating the pellets to a temperature at which the pellet mixture is thermally softened or melted, subjecting the mixture to a pressure over 500 pounds/in<sup>2</sup>. The blend can then be dried

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(see col. 7, ln. 1-23; col. 8, ln. 5-15, 42-49). The steps of forming the pellets and of heating the pellets to a temperature to thermally soften or melt the pellets in the invention of Matlack read on the steps of melt-polymerization and solid-polymerization as disclosed in the instant specification. Moreover, it has been within the skill in the art that process limitations would have no significant patentable weight in a product claim.

In regards to claim 5, Matlack teaches the thermoplastic resin in the outer and inner layer to be polyesters (col. 4, ln. 23-26), which are the same as disclosed in the instant specification. Thus, the Viscat softening point of the thermoplastic resin layers would inherently be the same as presently claimed.

Note that claim 5 was inadvertently included in the 103(a) rejection, not in the 102(b) rejection, in the prior Office action. It is now also included in this 102(b) rejection.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matlack as applied to claim 1 above, and further in view of Harada et al. (US Pat. 4,908,272).

Matlack is as set forth in claim 1 above and incorporated herein.

In regards to claims 5-6, Matlack teaches the inner and outer layers comprising thermoplastic resins, such as PET or polycarbonate (see col. 4, ln. 23-26). However, the reference does not teach the thermoplastic resin to be a polyolefin.

Harada teaches a gas barrier multilayer structure, comprising at least one layer of a copolyamide and at least one layer of a thermoplastic resin other than the copolyamide (see abstract). The thermoplastic resin may be polyolefin, polyester, or polycarbonate (see col. 4, ln. 5-13).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed polyolefin in replace of polyester or polycarbonate, as taught by Harada, in the multilayer of Matlack, and would have given the same effects. This is because Harada teaches that polyolefin, polyester, and polycarbonate can be used as alternatives of each other.

In regards to claim 8, Harada discloses an adhesive layer between the thermoplastic resin layer and the copolyamide layer that would provide enhanced adhesion strength between layers to be bonded (see col. 5, ln. 11-15, 33-35).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed the adhesive layer between the copolyamide layer and the thermoplastic resin layer, as taught by Harada, in the multilayer structure of Matlack, for the purpose of improving secured bonding between the layers and thus protecting the integrity of the multilayer structure.

***Response to Arguments***

9. Applicant's arguments filed on 01/04/2006 have been fully considered but they are not persuasive.

Throughout the Remarks, Applicants contend that Matlack differs from the presently claimed invention because the reference does not teach the same process in the making of the polyamide, i.e., the polyamide in Matlack is not formed by a melt-polymerization followed by a solid-polymerization. However, Matlack discloses the polyamide being formed by melt blending adipic acid, isophthalic acid, and m-xylylenediamine to copolymerize, forming pellets of the polyamide, and then heating the pellets to a temperature at which the pellet mixture is thermally softened or melted, subjecting the mixture to a pressure over 500 pounds/in<sup>2</sup>. The blend can then be dried (see col. 7, ln. 1-23; col. 8, ln. 5-15, 42-49). The steps of forming the pellets and of heating the pellets to a temperature to thermally soften or melt the pellets in the invention of Matlack read on the steps of melt-polymerization and solid-polymerization as disclosed in the instant specification. Moreover, it has been within the skill in the art that process limitations would have no significant patentable weight in a product claim.

Thus, Matlack anticipates the presently claimed invention.

With respect to the Examples in the Affidavits, the Comparative Examples to show the laminate of Matlack do not include the heating step after forming of the polyamide pellets. Moreover, the Examples of forming the multilayer only use polypropylene as the base layer, whereas claim 1 is directed to a thermoplastic resin layer, which includes other thermoplastic resins such as polyester that is also taught by Matlack. In general, the Examples provided in the

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Affidavits are directed to specific conditions and chemical components, which are not commensurate with the scope of the presently claimed invention.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tt  
March 15, 2006



**THAO T. TRAN  
PATENT EXAMINER**